

HELFFER-SJOESTRAND RANDOM WALK REPRESENTATION

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In the talk we discuss a recent common field in analysis and probability, the so-called Ginzburg-Landau interface models. In particular we outline standard techniques as the Helffer-Sjostrand PDE representation and relate them to the random field of gradients. An application of the Helffer-Sjostrand representation to non-convex energy functions leads to random walks having sparsely distributed negative conductances. The latter problem is currently under intensive study and analysis and we will discuss different strategies. If time permits we will present a large deviation result for random walks weights.